

## REAL-TIME ACQUISITION OF CO-REGISTERED X-RAY AND OPTICAL IMAGES

### ABSTRACT

An apparatus, method and program storage device are provided for co-registration of multi-modal images in a three-dimensional environment, where the apparatus includes a source of excitation light, an electromagnetic-ray source disposed relative to the source of excitation light, an electromagnetic-ray transparent mirror having a first surface disposed towards the excitation light and a second surface disposed towards the electromagnetic-ray source, a target location disposed towards the first surface of the electromagnetic-ray transparent mirror for locating a target and receiving the excitation light and the electromagnetic rays, an electromagnetic-ray detector disposed on an opposite side of the target location relative to the electromagnetic-ray transparent mirror for detecting electromagnetic-rays transmitted through the target, a second electromagnetic-ray transparent mirror having a light-reflective surface disposed towards the target location, and a light detector disposed towards the light-reflective surface of the second electromagnetic-ray transparent mirror for detecting light from the target.